

ABSTRACT OF THE DISCLOSURE

Graphite nanoplatelets of expanded graphite and composites and products produced therefrom are described. The preferred method of expanding the graphite is by microwaves or other radiofrequency wave treatment of intercalated graphite. The expanded graphite is preferably then crushed to nanometer (substantially all 200 microns or less). The expanded graphite is used in polymer composites. The expanded graphite is particularly useful for batteries, anodes and fuel cells.